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ART. I.—*A brief Account of the Origin, Progress, Symptoms, Mortality, and Treatment of Pestilential Cholera, as it occurred in the Mississippi Valley, and especially in the city of Memphis.* By LEWIS SHANKS, M. D., of Memphis, Tenn.

THE uncertainty which still exists as to the origin and mode of propagation of pestilential cholera, its extensive prevalence, and the enormous fatality which has everywhere attended its progress, invest all the facts connected with its history with deep interest; for it is only by an accumulation of facts, and by their comparison, that we can hope to arrive at a knowledge of its causes and nature, and of the best means of staying its ravages. With the view of contributing our mite to this great work, we shall in the present article give a brief account of the disease as it occurred in Memphis, and generally in the Mississippi Valley. Our remarks upon it will be especially confined to an account,—

1*st.* Of the general state of the weather before and during its prevalence.

2*d.* Of its commencement in Memphis, and the sanatory measures adopted.

3*d.* Of the time and manner of its invasion of New Orleans, its extension along the principal rivers, the time and manner of its commencement and prevalence at Memphis, and the facts in reference to its cause and extension.

4*th.* Of the symptoms at the commencement and during its prevalence, as modified by the weather, &c.; the post-mortem appearances, and the mortality.

5*th.* Of the treatment.

1*st.* *State of the weather previous to the occurrence of cholera in Memphis.*—In the absence of any regular and daily register of the thermometrical and hygrometrical changes, the general and striking peculiarities only can be given.

About the 20th of last October the rainy season commenced here, and from that time until the 29th of December, with the exception of occasionally two or three fair days, it continued to be cloudy, and to rain frequently in very heavy and protracted showers; so that the streams in the country were generally unusually high, and the earth was kept saturated with water. During this long continuance of rain the temperature of the atmosphere was uncommonly warm for the season, and this was particularly so during the latter part of December, up to the time that cases of cholera became sufficiently numerous to induce the Board of Health to announce its existence here, to a limited extent, as an epidemic, especially among the flatboat population along the landing.

In connection with this account of the weather, it is proper to state, that about the middle of December, influenza, within a few days, affected a very large proportion of the population of Memphis, and extended rapidly over the country. Generally, the disease was mild. The catarrhal symptoms were preceded and accompanied by slight chilliness, aching in the head, back, and limbs; but in some cases more decidedly inflammatory symptoms were developed; evinced by rigors, with fever, pneumonia, pleuritis or bronchitis, thirst, white fur upon the tongue, &c. It was fatal only in a few cases of delicate persons.

On the 29th of December the weather cleared, and there was no rain until the 12th of January. This spell of dry weather was sufficiently cold to freeze the ground, and it continued, except a sleet on the night of the 8th of January, for fourteen days. We call attention particularly to this, on account of the influence which it seemed to exert over both the increase and the symptoms of the disease, as will be more particularly noticed hereafter.

2*d. Its commencement in Memphis, and the sanatory measures adopted.*—On the 20th of December, the steamboat Convoy, which runs in the Memphis and New Orleans trade, arrived here in four days' passage from New Orleans, with two or three cases among the hands on board, which were pronounced cholera by Dr. Ashbel Smith and other physicians who saw them. Two of these cases proved fatal. Several days previously to the arrival of the Convoy, other boats going up the river from New Orleans had reported cases and deaths on their passage, especially among the firemen and deck passengers.

This certain evidence of the existence of cholera, in New Orleans, created some alarm here, and preparatory to its expected visitation of Memphis, the Board of Health urged the importance of immediately cleaning the streets, alleys, back yards, &c.; and draining and filling up all low places, upon which any standing water remained, which was carried into effect by the city council.

Means were also adopted to enlighten the public as to the best prophylactic means to be adopted, and as to the course they should follow in case of an attack.

3*d. Time and manner of the invasion of the disease.*—Some facts as to the time at which cholera commenced in New Orleans, its progress there, &c., are interesting, for the purpose of showing the length of time required, after the first well-marked case, to develop the pestilence there, and to so infect persons on the boats as to transport the disease here.

These facts are furnished in an authoritative form, by Dr. Fenner, of New Orleans. (See the preceding number of this Journal, p. 541, *et seq.*)

Dr. Fenner states, that the ship Swanton, from Havre, arrived at New Orleans on the 11th of December, and landed at the public wharf in the second Municipality. On the morning of the 12th, a woman of the Swanton was carried to the Charity Hospital, in a complete state of collapse. She was reported to have been attacked the night before with violent purging, vomiting, and cramps. On the 13th, a man, who was a passenger on the same vessel, was taken to the hospital in a collapsed state. The same day, the books show, that three other cases of cholera were received into the hospital, from different parts of the city. These five cases all terminated fatally. From the 13th, the daily number of admissions rapidly increased. On the 22d, in the hospital, 22 deaths occurred, and in private practice 23. The Board of Health reported on the 23d, that 45 deaths had occurred the previous day, of cholera; and that it was prevailing as an epidemic. By the 28th it had reached its climax; the largest number of deaths, 92, occurred on that day. On the 6th of January, only 38 deaths occurred, and the Board of Health announced the cessation of the epidemic. From its commencement to the 20th of January, Dr. Fenner estimates the number of deaths in New Orleans at 1400.

I have already stated that on the 20th of December, the steamboat Convoy arrived at the Memphis wharf, with cases of cholera; and that several days previously to her arrival other boats, passing up the river, reported cases and deaths on their trip up to this point. Allowing four days for the trip up from New Orleans to Memphis, and that cases and deaths had occurred on boats passing this point on the 18th, the boats must have been infected, or the persons sickening and dying must have received the poison in New Orleans, on the 14th, two days after the first cases occurred.

Previous to the 22d of December, I had not seen among our citizens, any striking tendency to bowel affections, more than usual in such damp, rainy weather. On that day, at 2 P. M., I was called to see a boy 16 years old, who had been employed in huckstering fruit, &c., about town, and was in the habit of attending at the wharf, when boats landed, to sell to the passengers. He had been attending the landing, and was at the Convoy the day before, but did not go on board.

When I saw him, he was in a state of complete and hopeless collapse,—blue, cold, pulseless, shrunk tongue, and breath cold; eyes sunk and injected, and his voice much altered. He was attacked the night before, about ten o'clock, with purging, vomiting, and towards morning cramps; but had gone down stairs, into the back yard to the privy, until two hours before I saw him. A short time before this, he had discharged from his bowels about three-fourths of a pint of inodourous fluid resembling thin corn-meal gruel. About two o'clock that night he died. He had been labouring under a slight diarrhœa for several days before the attack.

Although nearly every boat, passing up at that time and afterwards, reported cases and deaths, no other case occurred here among the citizens until the 26th.

A man and a woman about 41 years of age, residing one hundred and fifty yards distant from each other, and a quarter of a mile from the steamboat landing, were attacked on flatboats: both were temperate persons, and comfortably situated on their boats. They were deceived by the insidious progress of the disease, and, for the want of timely and efficient treatment, passed into collapse and died—one on the 29th, and the other on the 30th. On the 30th, six deaths occurred at different places, in sight of each other: four among the flatboat population, and two persons who had arrived from New Orleans, a few days previously. By the first of January, a considerable number of cases, and several deaths, occurred at different points from one end of the landing to the other, under circumstances that rendered it impossible for the disease to have spread by actual contact, as the cases were too remote from each other; and most of the subjects of them had neither been on an infected boat, nor in immediate contact with a case of cholera. To better understand the impossibility of the disease spreading so rapidly among this river population, by communication from one to another, or from direct communication with the steamboats at the landing, it is necessary to be known that the principal steamboat landing is in front of the lower part of the city, and that the flatboat landing extends from the steamboat landing, along up the river, to the Navy Yard; and at this season of the year, when a large number of flatboats, laden with produce, stock, &c., from the upper country, accumulate here, they stop above the city and the Navy Yard, so as to extend the line of flatboats nearly two miles in front and above the town. At the time the cholera commenced, there was a larger number of flatboats at the landing than usual, stopping here on account of the dread of the cholera below. The population connected with them, and with a few produce houses near the river, was estimated at about one thousand. Between this population and the steamboat landing, there was but little communication; so that, but few, if any, of those who were attacked, could either have been aboard of infected steamboats from New Orleans, or in contact with cases of cholera. This is rendered the more certain from the fact, that by the 2d of January, cases and deaths had occurred on different boats, from one extremity of the landing to the other; and one or two died at the upper part of the landing, a mile above town, who never had been, either down to the lower landing, or in town.

Intervening between the town and the river, is a wide batture, which separates the population on boats from that of the town, except a few persons occupying houses near the river, three to six hundred yards from the town.

Whilst the disease had thus extended itself the whole length of this line of population on the river, I neither saw nor heard of a case in town, which had not certainly originated at the river, except the case of the boy already mentioned—who had been visiting the steamboat landing to sell fruit to the passengers—which occurred on the 21st, and a child two years old, that took sick on the night of the 30th, and died the next evening.

This latter child was remote from the landing, in town, and no inquiry was made to ascertain whether it had been carried to a nearer point of exposure, to where the disease was prevailing, or not; nevertheless, when I saw it, four hours before it died, it presented all the symptoms of complete collapse, to which state it had been speedily reduced by vomiting, and copious rice-water purging in the night.

I have been thus particular in giving the facts, as to the time and the localities of the occurrence of the first cases, because they go very far towards proving that few, if any, of cases that originated here, could possibly have been produced by actual contact with, or direct communication from, other cases brought from New Orleans.

The inference, however, may justly be made, that the infection or poison which produces cholera is carried from place to place by steamboats departing from an infected port, especially when cases of the disease exist upon them; and that the infection or poison is thrown off from such boats, or transmitted, to a limited extent through the atmosphere, so as to produce the disease in persons strongly predisposed to it.

As tending to render more convincing the evidence upon which this inference is based, it is proper to state, that the cases occurring all along the two miles of the Memphis landing, within a few days of each other, were bordering on the channel, along which the steamboats daily passed, and were, most probably, produced by the specific poison communicated from the steamboats, through the narrow space of damp atmosphere intervening between them; because, if they are attributed to an epidemic state of the atmosphere, or to local and malarious causes, it is exceedingly improbable that they would have been confined to this long line of immediate contiguity to the steamboat channel, without radiating sooner in other directions among the citizens in town. Besides, the inference made from the facts presented here, is strongly, if not conclusively, sustained by the additional fact, that since the commencement of cholera in New Orleans, on the 12th of December, up to the present time, more than two months, not a single instance has occurred, within my knowledge, from the most extended inquiry, of a case originating off from the borders of the rivers traversed by steamboats, in the whole extent of this great valley. But extending along the various navigable rivers from New Orleans, the disease has taken already an extensive range. Cases have not only been carried to, but have originated along Red River as high as Shreevesport—along the Mississippi, on the plantations along the coast, at most if not all the towns, and at most of the wood-yards and many plantations as high as St. Louis—along the Ohio river, at Louisville and Cincinnati, and along the Cumberland to Nashville, where it was (February 23d) prevailing with considerable fatality. This extended prevalence of cholera could not reasonably be supposed to confine itself so long and exclusively to the surface and the immediate borders of the navigated rivers, if any peculiar epidemic state of the atmosphere, extending so vast a distance, was capable of producing it without the aid of the specific poison disseminated through it, from a source of infection being brought contiguous to the various places where the disease has been developed. It is certainly a fact, that during more than two months of prevalence of cholera, almost throughout this great valley, the disease has not extended, by the origination of cases, beyond the immediate borders of the principal rivers. Within three or four days after the first cases occurred in New Orleans, all the boats leaving that port had cases among the crew or passengers, and thus the disease was speedily carried up all the rivers connected with New Orleans by steamboat communication. Not a single case, however, is known to have originated anywhere above New Orleans, on any of the rivers, before infected boats and persons sick or dead of cholera, were carried to the places where the disease was afterwards produced.

Soon after the arrival of infected boats from that port, cases began to be produced at the various points where they landed, or passed sufficiently near to communicate the infection, occurring soonest and in the greatest number at the points nearest to New Orleans, and those most exposed by direct communication with the boats from that port. Going north from New Orleans in mid-winter, if cold has the influence generally conceded to it in checking the disease, the production, virulence, and diffusion of the poison, as they ascended north, would be diminished, and the production and extension of the disease less in proportion as they advanced in a northern direction.

Now, so far this has all proved to be exactly true. Next to the city of New Orleans, the coast and the towns on the lower Mississippi have suffered most. Red River plantations and Shreevesport have suffered next most severely; then Memphis, Nashville, St. Louis, Louisville, and Cincinnati, in the succession given, have suffered in proportion to their relative southern latitude and extent of communication with New Orleans, and boats from that port.

As an example, out of many that might be given in proof of steamboats soon becoming infected and producing cholera far from the point where it was prevailing, and where they imbibed the infection, and far from any evidences of choleric atmosphere, the following is noted: Dr. H. started from Louisville about the first of January, on the steamboat Melodeon, to come to Memphis. The Melodeon ran in the New Orleans and Louisville trade, and was direct from the former port. At that time there were no cases of cholera in Louisville, except a few in the Marine Hospital, taken from the New Orleans boats. Dr. H. started from Louisville when there were no evidences of any choleric atmosphere or infection, except on the boats above Memphis. The evening before the boat arrived here he was attacked with cholera, and, by the time of its arrival here, was extremely ill; he, however, went on to New Orleans, and recovered. On his return, about the 20th of January, he reported these facts to me; and also that another gentleman from the upper country had been seized a few hours after him, and had died in ten hours after the first symptoms of the disease.

Although inclining strongly to accord with the reports of health committees, and the generally expressed opinions of physicians, throughout the world, that cholera is not contagious, or infectious, the careful observance of the facts connected with its production and prevalence in this widely extended valley, and a careful examination of the many facts furnished by the highest authority elsewhere, upon this subject, authorize the conclusion, that whilst it may in some countries seem to extend itself as an epidemic, in others, as recently in this valley, it has presented more the march of an infectious pestilence.

The term infection is used in its most commonly received sense, to mean a specific cause of disease, that is readily transmissible through the atmosphere in certain conditions, to a greater extent than the virus of the more strictly contagious diseases; but always producing the same specific disease, and generating or reproducing itself.

Having alluded to facts elsewhere, confirmatory of those furnished here on this point, I shall only cite one or two which have been recorded from observations made and reported on our own continent, without extending their accumulation from foreign sources. Dr. Dickson states, (*Am. Med. Journ.*, vol. xiv.) "that the brig Amelia left New York on the 19th of October 1832, for New Orleans.

"Previous to her departure, some of her passengers were affected, but in six days the cholera was developed, and in eight days, 24 died. At this time she stranded on Folly Island, far out seaward, and about twenty miles from Charleston. This isolated healthy island was inhabited by four negroes. The captain, passengers, and crew, took refuge in the buildings on the island.

"These, together with eighteen members of the Charleston Guard, and a boat's crew of wreckers, who came to their assistance, made about 150 persons. Of the persons thus thrown together, all being healthy except those from the Amelia, who were affected with cholera, 23 died. Twelve of the passengers, six wreckers, and three of the four negroes, the nurse, and one of the city guards. Dr. Hunt, the attending physician, and the other seventeen city guards, were all, except one, attacked with cholera."

This fact creates a strong presumption, that the disease was communicated by the sick crew and passengers of the Amelia, to the other persons on the island.

Since the commencement of cholera in New Orleans last December, cases have been reported among the emigrants, on their passage from thence to California, at Chagres and at Panama; and the last accounts from California state, that an emigrant who died of cholera was buried with a cloak about him. The natives exhumed the body for the purpose of getting the cloak, and six of them died of cholera.

Taking the facts as they have been developed, and now exist, in reference to the progress and propagation of cholera from New Orleans, almost the entire extent of the steamboat navigation of the principal rivers in the great valley; and duly considering its invariable confinement to the surface and immediate borders of these rivers, though it has extended over many degrees of latitude, and several degrees of longitude, from the point of its origin; and that not a single case has originated anywhere before the arrival of an infected boat;—we would ask, can these facts be reconciled at all with many of the theories, and opinions, as to its cause and mode of propagation?

If cholera be not infectious, and communicable in that way, could a specific agent be forced from the bowels of the earth by subterraneous commotion, to the extent of all these long rivers, in so short a time, affecting only those persons on their surface, or immediate borders? Could a deficiency of electricity exist to so great an extent on all these rivers, as to produce a rapidly fatal disease, whilst the people but half a mile, or less from them, enjoy good health? Could any peculiar epidemic constitution of the atmosphere, produced by meteorological, or subterraneous influences, or by animal or vegetable malaria from general warmth, dampness, or vicissitudes in the weather, alone,—in mid-winter, without any appreciable specific morbid cause operating upon, or transmitted through it, produce a disease so malignant and fatal, extending thousands of miles along steamboat navigation on rivers and their immediate borders, without extending half a mile from them?

The facts furnished by the propagation of cholera in this extensive valley, so far, seem to be irreconcilable with any of these theories.

In addition to these theories, which have had not only able advocates, but their day of favorable consideration, I shall allude to a few others. Late advancements in microscopic investigations, have established the fact in reference to some, and greatly increased the probability at least, that other specific diseases are produced by animalculi, or vegetable fungi, and the progress of investigation promises to throw great additional light on this subject. Their almost incalculable reproductiveness would favour the conclusion that they might be produced and reproduced almost to any extent, from a comparatively small source; and be carried and transmitted to a limited extent by the sick, their clothing, ships, boats, through the atmosphere, so, as not only rapidly to produce cases of cholera, but even to give it the appearance of an epidemic, and especially so in the summer, when open houses, and a greater evaporation from the sick, their evacuations, &c., would carry with the exhalations into the atmosphere, these invisible, but specific morbid productions, so as to extend the *materies morbi*, and its influence, with as much rapidity as cholera has ever spread.

Dr. Cowdell, who adopts the theory of vegetable fungi as the morbid cause of cholera, and its more rapid and widely extended transmission, than that of the strictly contagious diseases, states, as to the reproductiveness of the cause, upon the authority of Fries, that a single one of the *reticularia maxima* has produced 10,000,000 sporules, that they are light and float rapidly through the air. He also states that the aptitude of these fungi for the human body is established by the fact, that they are found in various secretions and excretions in different diseases—in the fluid of pyrosis, in the exudations of puerperal fever, and in dysentery—and that these vegetations exist in thrush.

The production and virulence of cholera in low, damp, filthy, confined, and crowded places, and its general appertainance to such situations, are favorable to these views of its cause.

Whatever may be the *materies morbi*, however it may be produced, all the facts attendant upon its present prevalence go to prove that, it is specific in its character and effects; and that it is governed by different laws from those which govern other wide-spreading epidemics, such as its frequent precursor or follower—influenza. For while one travels most rapidly, with the winds, and passes over hill and dale, affecting speedily the population of entire countries, the other, so far as its recent propagation demonstrates its mode of extension, goes only where it is carried by tangible objects, with which it is transported, and is reproduced by its own subjects—affecting, in its course, such persons only as are within a limited distance of its influence; and that distance seems to be intermediate, between that of the strictly contagious and the epidemic diseases.

Another remark may warrantably be made in reference to the cause of cholera: that, like other specific morbid causes of disease, it has, in addition to its many other incidental effects, one universal tendency to affect the bowels in a peculiar way. The virus of small-pox, measles, chicken-pox, scarlatina, &c., tend universally to affect the skin, and to pass out of the body, each in its particular way, through that tissue: so, other specific diseases affect, in their peculiar way, other organs and tissues.

This analogy between cholera and other diseases, particularly those which are contagious and infectious, and which transmit themselves in that way, is strongly corroborative of the specific, reproductive, and infectious nature of the cholera virus. It indicates another likeness to the specific diseases alluded to, which will be more particularly noticed in treating of its pathology, *that, as in them,* the poison which has impressed its morbific influence upon the blood, as well as on the nervous system, tends universally to be thrown off through a particular tissue and outlet of the body.

These analogies and resemblances to the specific and infectious class of diseases, seem to entitle it more to be considered as a *pestilence* than an epidemic.

4*th. Symptoms and pathology of cholera.*—I shall briefly give the prominent symptoms presented in the different stages of the disease at its commencement here, and such modifications as occurred during its prevalence, from the influence of the weather and other causes, the post-mortem appearances, and the pathology upon which its treatment was based in the different forms which it presented in different cases.

The first cases occurred among the flatboat population, who are subject to diarrhœa from the effects of the Mississippi water, especially those persons coming from the Ohio valley. They were affected with diarrhœa from one to several days; and some of them, who had had slight looseness of the bowels for several weeks, dated the commencement of their attack one to two days previously to the occurrence of the spasms, as at that time they had an increased looseness of the bowels, the discharges became more frequent and copious, and more liquid and serous in appearance, without much uneasiness or pain,—each discharge flowing off easily, and followed for a short time with relief of the uneasiness of the bowels which preceded it. So insidious was the outset and first stage of the attack, in most cases, that patients could not be induced to believe by their friends or their physicians, that it was anything more than the ordinary river diarrhœa, such as they had frequently gotten well of before without medicine, and that they were really in extreme danger of a fatal development of cholera.

This exemption from the feeling of being dangerously sick, or of there being any cause of alarm from the precursory diarrhœa, was such as to induce many to refuse to take medicine or consult a physician, until far advanced into the second stage of the disease, or even verging upon collapse—when the pain from cramps, thirst, sick stomach, and vomiting, became prominent and distressing. This remarkable manifestation of indifference to, and insensibility of danger, seems diagnostic of pestilential cholera.

I have seen cases in which the stools had been frequent and copious from one to two days, and had become thin as turbid Mississippi water—where the eyes were sunken, hollow, and injected; the extremities, face, and general exterior, shrunk, cool, or cold and bluish; the pulse feeble, or almost imperceptible; the voice hoarse and weak, and cramps commencing in the extremities—and still the patients would insist that there was not much the matter with them, and if let alone they would soon get well without medicine. On visiting one case of this kind, I found the patient sitting up in a damp, confined cabin on a flatboat, blue, shrunk, and perfectly pulseless at the wrists, complaining only of cramps, and vomiting of the water, which his intense thirst induced him to drink freely. This man's system had been gradually, but completely, drained by the easy but copious serous discharges from his bowels; and though he then believed himself in no danger, in a few hours he was a corpse.

The marked increase of a previous diarrhœa, or the commencement of the precursory diarrhœa, generally took place in the night, or early in the morning. The precursory or first stage generally continued, the stools becoming more and more copious and liquid, until the following night or morning; or, if the attack was less violent, until the second night; when the second stage was ushered in by vomiting and cramps, commencing in the extremities, generally the feet and legs first. The vomitings at first consisted of undigested food, but soon became copious and watery, and greater in quantity than the amount drank. The thirst, impairment of respiration and its functions, general enervation of the system, waning of the action of the heart and force of the circulation, suppression of the secretion of urine, &c., followed, in these cases, in proportion to the time and the quantity of the discharge from the bowels.

The second stage, in a longer or shorter time, from three to fifteen hours, dependent mainly on the quantity of the *liquor sanguinis* drained from the circulation, and the rapidity with which this took place, ran into the third or collapsed stage, which was marked by an almost or quite extinct pulse at the wrist; by a cold, blue, shrunken, shrivelled, and sodden state of the general exterior, particularly the extremities and face; the features sharpened and the countenance much altered; the voice changed to a hoarse whisper; the tongue pale or bluish, cool or cold, generally broad and moist, with a thin white fur extending over it; the breath cool, or cold; thirst insatiable; the eyes hollow and injected, and, during intervals of quietude, only partially closed, generally showing the adnata, the balls being turned upwards; the secretion of urine entirely suspended; the absorption from the stomach and bowels suspended; the respiration generally slow, though sometimes hurried, but always oppressed and confined; the functions of respiration, in the oxygenation, and the change of the venous to arterial blood, and the consequent development of caloric much impaired; the mind rational and clear, but slow and feeble in its actions.

After passing fully into this collapsed state, the purging, vomiting, and cramps gradually diminished, and in some cases almost entirely ceased for several hours before death took place. Death occurred, in cases where the spasms persisted, after the circulation was much impaired, suddenly, from a spasmodic affection of the heart and diaphragm arresting vital action; in others, and most commonly, from enervation of the whole system, resulting in insensibility and death. This collapsed state continued from a few hours to one or two days before it terminated in death.

I have already stated that the first cases of cholera occurred at the close of a long continued spell of warm, rainy weather. On the 29th of December it cleared off, and from that time the weather continued dry, becoming so cold as to freeze pretty hard, during a continuance of fourteen days. Eight or ten days after the commencement of this dry spell of weather, when it was coldest, such cases of cholera as I have described were suspended for several days. During these few days, the attacks were ushered in with uneasiness of the stomach and bowels, attended with a disposition to stool, the dejections being small; or with sickness and pain, or cramp, in the stomach, and vomiting of undigested food, without purging; with giddiness or pain in the head, soon followed by a feeling of great prostration; the pulse slow and feeble; the surface and extremities cool; and cramp in the bowels, and sometimes in the extremities. These attacks were attended with so much suffering, that immediate medical aid was sought, and none of them terminated fatally, except one. The subject of this case, which occurred on the 10th of January, was a negro man of intemperate habits. When reaction began to take place, about nine hours after the attack, he complained of numbness in the entire right side, without any pain, however, in the head, but intense pain in the bowels. As reaction increased, he became more and more stupid and insensible, and died apoplectic, about seventeen hours after the attack.

On the 12th, it had become warm and rained heavily, and the cloudy and rainy weather continued about a week. Soon after this rainy spell commenced, the cases assumed more of the previous and fatal character, with the profuse watery purging, &c. Within a few days after the commencement of the rain, several of the most sudden deaths occurred, the attacks commencing without the precursory diarrhœa;—purging, vomiting, cramps, and collapse ensuing so rapidly as to prove fatal in eight to twelve hours after the attack.

Flatulence, indigestion, aching, or pain in the stomach and bowels, with and without diarrhœa, giddiness of the head, slight spasmodic twitchings of the muscles in various parts of the body, &c., were frequent during the prevalence of cholera. In some degree, perhaps, every person felt the influence of the choleraic poison.

In most of the cases when the vomiting, purging, and cramps were relieved, and reaction perfectly restored, followed by perspiration, and a restoration of biliary and urinary secretions, recovery invariably took place speedily, and without consecutive fever.

But if reaction was incomplete, and a healthy perspiration and the other secretions were not restored, the appearances of amendment were generally delusive, and resulted in a typhoid form of consecutive fever, marked by a brick-red or bluish-red colour of the skin; dry and red tongue; thirst; indifference, gradually increasing to stupor; with slow pulse, and slow, heavy respiration, and finally coma and death. In such cases, neither the secretion of urine, nor a proper secretion of bile was restored, and they terminated fatally after this imperfect reaction, in from three to seven days.

In other cases, however, in which the reaction took place, often from a less hopeless condition, under the use of stimulants exclusively, such extensive gastro-enteritic inflammation was produced, as to modify the progress of the case; and though both biliary and urinary secretion, and also perspiration were produced by proper means, still the case became protracted, presenting most of the symptoms of the more lingering cases of typhoid fever. These cases, though but few occurred, generally proved fatal.

I treated two cases at the same time, in the same house, of middle-aged men of intemperate habits—one a second attack, in which reaction was imperfectly obtained from a collapsed state,—the pulse feeble and small, the extremities shrunk, cold, shrivelled, &c., and severe spasms with the congee stools. The pulse gradually rallied, becoming slow, and tolerably full, but soft; the stomach retained drinks; the skin perspirable and warm; the complexion restored, except the brickish-red cast; the discharges from the bowels became consistent, but of a grass-green, gelatinous, or pultaceous character. All the symptoms improved for several days, except the entire suspension of the secretion of urine. The fourth day of this condition, the pulse and respiration became slower, the tendency to stupor increased, and finally the patients died comatose on the sixth day after the commencement of reaction, without any secretion of urine.

The suspension of urine occasionally continued two to four days, in persons who had not been so completely drained by the copious rice-water discharges as to produce complete collapse, without either seriously affecting the brain or interfering with recovery. I saw a gentleman of good constitution and habits, who had been treated in the second stage of the disease, without having had very copious purging, upon Hawthorn's sweating plan. He had passed more than a hundred hours without any secretion of urine, and without any action upon his bowels, or any evidence of biliary secretion. Some thirst, fever, headache, and considerable prostration existed. By a mild mercurial alterative course, the biliary and urinary secretions were restored in six or eight hours, and he gradually recovered.

In the different cases, stages, and grades of the disease, the discharges were various. The cases first described, in which the diarrhœa gradually increased until the copious evacuations drained the system of the serous portion of the blood, presented more unequivocally the *congee* or rice-water discharges. In some instances, in the commencement of the collapsed stage, they were as clear and inodourous as pure water; but, after standing a short time, they exhibited a loosely floating, filiform, flocculent matter. In other cases, especially when the disease supervened upon a chronic diarrhœa, the stools were offensive, and in appearance and consistence like dirty soap-suds, slightly frothy; and upon settling presented the appearance of thin gruel made of yellowish corn-meal, the upper part becoming clear and the turbid particles settling down in the vessel. In one case, in the collapsed stage, the stools were offensive, and resembled chocolate made with milk. In another case, after a sudden and violent attack, the discharges were suspended, by the remedies used, some twelve hours; and, when they returned, they consisted of copious bloody serum, which, upon standing, deposited loose coagula of gelatinous matter.

The ejections from the stomach were first undigested food, afterwards mainly the fluids drank. No complaint was made of any prominent taste in the ejections from the stomach, nor was bile ever either vomited or passed in any case, in the uninterrupted course of the disease. In every stage of the disease previous to the consecutive fever, except in the two cases of collapse which I have mentioned, when bilious discharges from the bowels were obtained recovery speedily and certainly took place. In those two cases, although the discharges were dark-green and pultaceous, it is doubtful whether they were bilious, or were from the liver at all; and whether they should be set down as an exception to the rule. I have occasionally seen such stools, in bad cases of congestive fever, in which calomel had been given freely; and I have been satisfied that they were made up of morbid acid secretions from the bowels, produced by the calomel, and coloured by it, and that there was no biliary secretion at the time. They have generally, in congestive fever, been unaccompanied with any improvement in the cases; and have most commonly indicated a fatal result.

Post-mortem appearances.—It is needless to occupy much space in the account of these, as they were similar to those generally found elsewhere. The shrunken, blue, or marbled exterior; the hollow eyes deeply sunk in the sockets; the congested and brownish-red aspect of the interior; the dark viscid, but uncoagulated blood accumulated in the cavities of the heart and large vessels, particularly the right side of the heart, the pulmonary artery, and the vena cava; the contracted state of the large bowels, their general surface lined with mucus, or a starchy matter; the contracted and empty state of the urinary bladder; the gall bladder filled with a dark-coloured viscid bile, the liver showing no immediate change from the disease, except engorgement of its large vessels, with the dark and viscid blood; and all the common appearances described by the best authorities elsewhere, as the result of their autopsies, were found here. The case particularly mentioned of a negro man, who died apoplectic, presented, in addition to the appearances already mentioned, great congestion of the vessels of the scalp, fulness of all the sinuses of the brain, and an effusion of several ounces of dark viscid, uncoagulated blood, between the dura mater and arachnoid membrane, on the upper and back part of the left side of the cerebellum; also a small effusion of serum in the ventricles, and considerable under the base of the brain and the spinal canal. The section of the cerebellum presented a remarkable number of black spots, showing altogether a very great degree of general congestion and effusion in the brain; and accounting fully for the numbness of the right side, which commenced with the reaction, and also for the coma and death.

The sensible character of the blood is peculiar in cholera. No discrepancy exists among writers, except that some speak of coagula in the cavities of the heart and large vessels, while others describe it as remaining, whenever accumulated in an uncoagulated state, dark, thick, viscid, &c., resembling, somewhat, molasses in its consistence; and also, when drawn from the body, standing without coagulating, or separating into serum and crassamentum, as in health.

The autopsies and observations made here, were confirmatory of the latter condition of the blood.

Mortality.—From the commencement of cholera here, on the 29th of December, in six weeks, as near as could be ascertained, in the city and suburbs, about one hundred died—nearly all in private practice, as the hospital is too remote for the accommodation of cholera cases. The cold, dry weather, which occurred soon after the commencement of the disease, doubtless lessened its propagation and fatality. Up to the present time, March 10th, sporadic cases continue to occur, and occasional deaths.

This mortality took place in a population of ten to twelve thousand persons, and chiefly among negroes, and those white people, who, from their condition, ignorance, or indifference, either had not the means—did not know—or disregarded the plain directions furnished by the Board of Health for the prevention and for the cure of the precursory stage of the disease.

The proportion of deaths to the number of cases could not be ascertained, as no reports were made of the latter.

From my own observations, not only in my own cases, but also in those attended by other physicians, which were as much extended as possible, for the purpose of seeing the disease in all its stages, grades, and different aspects, embracing about forty of the cases which terminated fatally, and a proportional number of those cured, there was but little success in curing the disease after perfect collapse, and cessation of the pulse at the wrist, though all the various means proposed for this condition were frequently and fully tried. I have seen myself but one recovery from pulseless collapse.

In the precursory stage of the disease, numbers cured themselves, and the members of their families who were attacked, by the prompt use of the remedies directed to be used by the Board of Health; and under personal medical attendance they were nearly all cured.

In the second stage of the disease, the success was generally gratifying, particularly if the necessary remedies were properly used before the system was too much drained by the rice-water discharges, and the waning pulse and shrunken features denoted the near approach of collapse.

5*th. Treatment.*—On the treatment of cholera so much has been written, and is accessible to every medical reader, that more than a brief outline of the plan of treatment adopted, and considered most successful here, is unnecessary.

1*st. Precursory stage.*—This stage in its commencement was, doubtless, arrested and cured in many cases by various means—such as brandy, capsicum, laudanum, peppermint, camphor, &c., separately and combined; but after it was fully established, though the use of these means often suspended for a time the purging, it most commonly returned in a more aggravated form and required other remedies in conjunction with them, to restore and correct the secretions and make the cure permanent. For this purpose, mercurials in moderate quantity, if not indispensable, were most efficient. In the crowd of business, for convenience and dispatch, finding it answer the indications well, I used a pill in this stage made of calomel 3 to 4 grains, camphor 1½ to 2 grains, opium 1 grain, oil of capsicum half a drop, or capsicum 1 grain. These pills to be taken from one to four for the first dose, according to the urgency of the purging, and from one to two to be repeated every hour or two, until the uneasiness or pain in the bowels and diarrhœa are relieved; their effects to be aided by a hot mustard foot-bath, close confinement to the horizontal position in bed, the use of warm, gently stimulating drinks, as sage, balm, ginger, or green tea, or toast, or rice-water, with bicarbonate of soda, and also by hot applications to the feet, and a mush poultice, rendered stimulating by the addition of pepper or mustard applied over the stomach and abdomen. After the purging was arrested, and perspiration restored by these means, if the bowels remained constipated more than twenty-four hours, they were moved by a teaspoonful of turpentine, combined with one to two tablespoonfuls of castor oil, which generally brought off bilious stools. During several days the diet was restricted to gruel, rice, tea and crackers, chicken water, &c., which generally established the cure.

2*d. Second stage.*—Called on to institute treatment in the second stage, when the purging of thin muddy, or rice-water discharges, with vomiting and cramps superadded, indicated the urgency of prompt and efficient relief to prevent the pending and fatal collapse, I required a strict observance of the horizontal position in bed, as free ventilation as possible, to supply fresh air for respiration, and gave, instead of pills, which were too slow in dissolving in the stomach, for this urgent condition, the following compound powder:—calomel, camphor, and capsicum, each, equal quantities, and opium 1 grain to every 20 grains of the compound, all to be well pulverized and rubbed together. Of this from 10 to 30 grains were given, according to the urgency of the symptoms, at a dose, mixed with from a teaspoonful to a dessertspoonful of laudanum when necessary, and washed down with a small quantity of cold water; and all drinks were prohibited until its impression was made on the stomach and general system. If vomited up, the dose to be repeated, and if the purging and cramps were not relieved, the dose to be repeated every half hour or hour, in such quantities, both of the powder and laudanum, as seemed necessary to control the symptoms. These remedies were aided by the *hot* mustard foot-bath, hot applications to the feet and back, a large blistering plaster applied over the stomach, &c. As soon as these means controlled the irritability of the stomach, warm drinks, toddy, toast water or teas, were allowed ad libitum. But while the stomach continues irritable, drinks of all kinds are almost immediately vomited up, and the thirst and vomiting are both sooner relieved when drinks are prohibited, and small lumps of ice only are allowed.

The compound powder and the laudanum were given in quantities proportioned to the age, constitution, and ability of the patient to bear them, and the emergency of the case. When the serous discharges from the bowels were copious, though the number of stools may not have been numerous, with a tendency to speedy collapse, especially when accompanied with violent cramps, a large dose both of the capsicum powder, and in some cases 20 to 30 grains of calomel additional, and the laudanum were given, repeated with or without the additional calomel at short intervals, if necessary to arrest the symptoms. At this critical juncture, when the physician is often first called, the life of the patient depends upon a correct judgment being formed of the *dose* which the patient can bear with safety; and the *dose* necessary should be given at once, and if it does not produce the effect desired in from three quarters to an hour, it must be repeated until the object desired is attained. The propriety and necessity of this prompt and bold practice when the treatment is commenced under these circumstances, are obvious—for one more stool—the delay or loss by small and inefficient *doses* of one hour, may bring about fatal collapse. In addition to the other means, an enema of a gill of starch and a drachm or two of laudanum, or, what was more efficient and better retained, one to two drachms of laudanum with one drachm of spirit of camphor, ether, and aromatic spirit of ammonia, or essence of peppermint, each, combined with the starch, is a valuable auxiliary, both in arresting the discharges and rousing up and sustaining the nervous energies of the system.

These means being successful in arresting the symptoms, and producing reaction, perspiration, and healthy secretions and excretions, the bowels were generally moved in due time, and the discharges were bilious; but if the bowels continued locked up beyond twenty-four or thirty-six hours, castor oil and turpentine were administered, to open them. These results being produced, mild diluent, and, when necessary, gently stimulating drinks, and abstemious diet, generally perfected the case in a few days.

3*d. Collapsed stage.*—In the collapsed stage the same course was pursued, with the addition of twenty to forty grains of calomel to each dose of the compound powder. The additional large doses of calomel were given, not so much with a view to its direct effect in producing reaction, as to its well-established effects in allaying irritability of the stomach, arresting watery discharges from the bowels, and restoring secretion and excretion when reaction was produced by other means, and thus preventing consecutive fever. By the use of calomel in this way, when its wonted effect upon the secretions was produced, consecutive fever was invariably prevented, as the result of either the second or third stage of the disease; and the only troublesome secondary symptom to the patient, which occasionally occurred, was ptyalism. Indeed, this specific effect of mercury, in any given ratio of doses and time, seemed more liable speedily to be produced in cholera when full reaction took place, than in any other form of acute disease.

In a case of speedy recovery in a man about twenty-five years old, from a state of pulseless and apparently hopeless collapse, attended with violent cramps, I gave, as a first dose, about twenty-five grains of the compound capsicum powder, with thirty grains additional of calomel, mixed in a large tablespoonful of laudanum, washed down with a glass of brandy. In a few minutes it was vomited, by a spasmodic action, far across the room. The same dose was repeated, and washed down by a swallow of cold water. The powder and laudanum, in the same quantity, were twice more repeated in the space of an hour and a half, and no drinks allowed until the stomach was settled, and partial reaction indicated absorption, when diluent drinks, with a moderate quantity of brandy, were given freely. In addition to the other means already mentioned in this and many other cases, a prompt and important effect was produced by woollen cloths wrung out of nearly boiling *hot* water, and applied to the stomach, spine, and extremities. After the three doses, laudanum alone was given, in teaspoonful doses, at intervals of two to four hours, until the cramps were relieved. In eighteen hours, this man took from an ounce and a half to two ounces of laudanum. The next day he was much better, though he had slept but little, and evinced no decided effect from the laudanum, except itching of his nose and of the surface generally. The following day he was well enough to sit up, and recovered speedily, with but a slight affection of the gums from the calomel.

So large an amount of opiate was not given in any other case. The result, however, proved that, though it was retained in the stomach, and absorption was re-established in a few hours, still the feeble state of the circulation, and, for a time, the want of supply of the healthy and necessary amount of arterialized blood in the brain, prevented the ordinary effects of the opiate from being produced on the brain and nervous system.

Being fully convinced, from many years of careful observation, of the importance and necessity of the free use of opiates and calomel in congestive fever, of the continued form,—from the pathological likeness of cholera, the same practice to some extent was adopted.

In cases of congestive fever, coming on as they frequently did here, eight or ten years since, with lassitude, slight chilliness, sick stomach, vomiting, prostration, &c.: vomiting and thirst increasing in the same ratio with each other; the pulse waning; the surface and extremities becoming cold, with increasing complaint of oppression and internal heat;—though in some few cases this complaint of heat was absent, and the tongue and breath were cool;—the pulse gradually diminishing down to a thread; the surface wet with cold, clammy perspiration; the skin shrivelled and sodden, as in cholera, but never so blue and marbled; the mind generally clear; but during the development of this category of symptoms, which required from three to five days to arrive at their acme, without any evidence of paroxysms, except an increase of oppression, frequency and feebleness of the pulse in the evenings, there were almost invariably great torpor and obstinate constipation of the bowels.

In these cases, opiates were tolerated and required in large doses; and my practice has been to administer them in combination with calomel, so as to give ten to twenty grains of the latter three or four times a day, with as much of the former as was necessary to relieve the concentration of nervous irritation upon the stomach, and to sustain the innervation of the brain and general system, until the action of the nervous and vascular systems were equalized by the influence of the opiates, and other appropriate means, and permanent healthy action secured by the general alterative and stimulating effects of the mercury upon the secretory and excretory organs.

This practice has been so uniformly successful in the condition of the system described, that I have seen no reason to change it for any other; though to make it so, in extreme cases, an amount of opiates equal to twenty grains of the gum in twenty-four hours might be required.

In cases of extreme irritability of the stomach in congestive fever, when the internal use of opiates failed to control it, and the general restlessness, after blistering the precordial region, the external application of morphia acted promptly and efficiently. This is more the case in cholora, and is a means of more value, when there are great depression and restlessness, and the stomach continues to be irritable, and no absorption is taking place from the stomach and bowels, than almost any other.

In the collapsed state of congestive fever, ice rubbed over the extremities, and the parts to which it is applied wiped dry, and well rubbed, and this followed by external heat, to be repeated every half hour or every hour, is a valuable means of restoring excitability and producing general warmth and reaction. This remedy used in cholera, when the system was not too much drained, and the blood rendered too thick to be invited back into the superficial capillaries, is decidedly valuable. But in the collapsed stage, when the blood has retired from the extremities and surface, it has failed to do more than temporarily improve the colour of the skin, and revive for a transient space of time the slight evidences of circulation that still existed. Like all other means in that condition, generally it fails in producing any permanent benefit.

No other disease, except sporadic cholera morbus, presents so many resemblances to epidemic cholera, as this continued form of congestive fever, in its symptoms, pathology, and treatment; though in it the profuse purging and cramps characteristic of cholera are wanting, and indeed in most cases the bowels are torpid; yet the general likeness is often striking, and, compared with cases described by Mr. Thorn and others, on the Ganges, where cholera collapse and death sometimes occur without purging, the resemblance is still greater.

Now this form of congestive fever is clearly the effect of malarial influences, and it is peculiar to low, damp, and malarious regions. The specific virus of cholera tends universally to affect the bowels and produce watery passages and cramps, and thus to constitute striking diagnostic symptoms between it and the most malignant forms of malarial fever. There seems to be no good reason, however, to *disbelieve* that the *cholera virus* and *malaria* may *co-exist* and *conjointly* act upon the system; and indeed, the fact that the cases of cholera which result speedily in collapse, without any purging, thus resembling pernicious fever, are only reported by physicians who have witnessed the disease in highly malarious and hot regions, such as the Delta of the Ganges, strongly corroborates their *conjoint* effects upon the system, and the occasional *predominance* of the malarial influence, in the production of such cases.

The ataxic cases which occurred here during the cold dry weather, were attended with pain in the head, stomach, and bowels, and prostration, without much, and in some cases without any purging; the pulse slow, 40 to 60, and soft; the surface cool, and the extremities cold and cramped.

Opiates in these cases, and especially when the cephlalagia was severe, could only be used with great caution. The abstraction of blood in this condition, and in this form of the disease only, seemed indicated and useful to develop reaction, and aid in equalizing the circulation and restoring healthy secretion.

4*th. Consecutive stage.*—When the plan of treatment I have given was adopted and properly carried out, in the previous, or three stages proper to cholera, consecutive fever rarely occurred; but, treated exclusively with anodynes, astringents, and stimulants, the recoveries were more apt to be slow, and attended with want of proper secretion and with gastro-enteritic inflammation, presenting a more or less protracted case of a typhoid form of fever. The treatment of this condition requires the use of alteratives, diluents, diaphoretics, &c.; a careful attention to the condition of the brain, to prevent a determination of the disease to that organ.

The importance and effect of a few of the prominent remedies in the treatment of cholera, deserves a passing notice.

Opium and Calomel.—Much importance has been attached to the free use of opium and calomel, especially in the second and third stages of cholera. While, in the precursory stage, they are important to moderate and arrest the purging, and at the same time to correct the morbid secretions, in the second and third stages the life of the patient depends upon the attainment of these objects in the shortest possible time.

To effect these objects, both observation and analogy prove that no other remedies are so efficient and certain, as opium and calomel. The want of ordinary susceptibility of the nervous system to the impression of remedies; the suspension of absorption from the stomach and bowels; the regurgitation of the chyle, and the rapid pouring into the stomach and bowels of the *liquor sanguinis* from the general system, carrying out speedily all the remedies given either by vomiting or purging, and by this current of determination to the bowels preventing their absorption and diffusion through the system; all show the indispensable necessity of large doses to secure the desired object.

The opiates—and *laudanum*, or *morphia*, from their more prompt action, are best—must be given in large doses, sufficient to arrest the discharges. Other effects, not much less important in this condition, are more certainly produced by *it* than any other remedy. It sustains the nervous energies and the action of the heart; it relieves local irritation and cramps, and equalizes innervation, and thus helps the system to rally under the depressing influence of the morbid poison. For the additional effort, of safely eliminating the poison from the system, and correcting the morbid secretions produced by its influence, the great weight of medical authority, and my own experience, are in favor of calomel above all other remedies. It must, however, successfully to meet the emergency, be given in large doses, and immediately with the laudanum, so that no time may be lost in securing its alterative action. To the inexperienced, the use of calomel in large doses, when there is copious serous purging, might seem a paradox; but who that has almost invariably found a full dose of calomel, uncombined with opium, arrest the frequent watery discharges in ordinary diarrhœa, and gradually give them healthy consistence, could doubt the propriety and importance of its use in this condition, with a view to its alterative effects?

Large doses of opiates are warranted, and proved to be safe in this condition of the system, not only by ample experience, but from analogy. If the case terminates fatally, nothing is certainly determined as to the relative effects of the remedies used, and the disease upon the system; because, when it is exhausted by the discharges, the general enervation results in insensibility and death, without the use of opiates; this insensibility and stupor which immediately precedes death may be attributed incorrectly to the effects of the opiates.

But when a violent case is treated by the free use of opiates, such as the case of complete collapse reported, then and then only can the favourable, or unfavourable effects of this remedy be fairly and fully determined, by the clear manifestation of its effects.

In cases of feeble action of the heart, and deficient supply of blood to the brain, either from hemorrhage or from other causes, large doses of opiates are not only safely tolerated, but required to sustain the system, as in uterine hemorrhage, mania-à-potu, congestive fever, &c.

For the purpose of stimulating and constringing the exhausted surface of the stomach and bowels, and also rousing up and sustaining the depressed nervous energies of the system, and producing reaction, capsicum, camphor, spirit of ammonia, brandy, and various other stimulants and aromatics are valuable auxiliaries.

Another very important requisite deserves to be more particularly noticed in the successful treatment of cholera, after the system is at all exhausted by the discharges of its white blood; absolute confinement to the *horizontal* position in bed.

In no condition except after profuse hemorrhage, is the effect of the erect posture so immediately manifest in producing faintness, sick stomach, enfeebled pulse, &c., as in cholera. In a state of partial reaction, and a favourable and promising change in the symptoms, after great exhaustion from profuse discharges, I have seen all undone, and the fatal collapse reproduced by the patient's assuming the erect posture on getting out of bed.

Prophylaxy.—Enough has already been said about the peculiar habitudes of the cholera virus; the favourite localities and situations for its development and propagation, in places which are low, damp, confined, and filthy. Obviating by every means these unhealthy conditions of the atmosphere, or removal from such localities, are the important measures necessary to lessen or to avoid its virulent influence.

The more immediate means of protection against an attack of the disease, consist in being surrounded as far as possible by all the comforts of life—such as dry, airy houses, warm clothing, the avoidance of exposure or fatigue, nourishing and digestible food, taken at regular intervals, and regular hours of rest and exercise, or attention to business.

When cholera is prevailing as an epidemic, those persons who enjoy these advantages, and avail themselves strictly of their observance, are but little liable to severe or fatal attacks. In addition to these precautionary and protective measures, the introduction of cases of the disease into crowded houses, where proper ventilation and cleanliness cannot be secured, as far as possible should be avoided; and, when cases occur under such circumstances, if practicable, they should be removed.

Soon after the commencement of cholera here, a case was taken from the flatboat landing into a filthy and crowded house. After a severe and protracted illness he recovered. But, during his illness, other cases occurred in the house, and the disease progressed among the inmates, consisting of several families, until twenty-seven out of thirty persons were affected with it, and several relapses occurred. Finally, nearly all were removed from the house, when they speedily recovered. At the time this large proportion of cases occurred, out of whom six died, excepting in two adjoining houses, there were no other cases in the vicinity, although it was near the centre of the town.

Proper attention to these means will secure, in a great degree, immunity from the disease; whence it is that the chief fatality from cholera occurs among that portion of the population who either cannot or will not attend to their observance.

When, however, attacks do occur, it is a matter of the greatest importance to attend promptly to the first symptoms. By immediately and properly treating the first symptoms, except now and then a case occurring under the most unfavourable circumstances, none should prove fatal. There is no mortal disease in which the healing art presents so certainly the life-preserving balm as in cholera, if early and properly used. But so insidious and rapid is the progress of the disease, that many fall victims to it from not knowing or feeling the importance of its early treatment.

Philanthropy, and every proper consideration connected with the usefulness of the profession, require that, in reference to this disease especially, all proper means should be used to enlighten the people, both as to the proper and best prophylactic means to be observed, and also the importance of the early use of these remedies.

MEMPHIS, 1849.